

- H1
- (i) A is a bridging group containing a Group 13-15 element;
 - (ii) each E is independently a Group 15 or 16 element covalently bonded to M;
 - (iii) each R is independently a C₁-C₃₀ radical or diradical group which is a hydrocarbyl, substituted hydrocarbyl, halocarbyl, substituted halocarbyl, hydrocarbyl-substituted organometalloid, or halocarbyl-substituted organometalloid;
 - (iv) m and n are independently 1 or 2 depending on the valency of E; and
 - (v) p is the charge on the bidentate ligand such that the overall charge of LMX_p is neutral;
 - (c) each X is, independently, a hydride radical, a hydrocarbyl radical, a substituted hydrocarbyl radical, a halocarbyl radical, a substituted halocarbyl radical, hydrocarbyl-substituted organometalloid or halocarbyl-substituted organometalloid; a univalent anionic ligand; a neutral hydrocarbyl-containing donor ligand; a neutral non-hydrocarbyl atom containing donor ligand; or two Xs are joined and bound to the metal atom to form a metallacycle ring containing from 2 to 20 carbon atoms; or two Xs are joined to form an anionic chelating ligand; and
 - (d) r is 1, 2 or 3;
 - II.) an activator compound; and
 - III.) a solid support wherein said late transition metal connected to said bidentate ligand is immobilized on said support, where the late transition metal loading is less than 100 micromoles transition metal per gram of solid support.
-

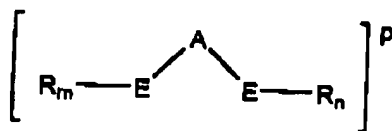
H2

6. (Amended Five Times) A late transition metal catalyst system for olefin polymerization comprising: I.) a Group -9, -10 or -11 metal connected to a bidentate ligand, wherein a catalyst precursor has the formula:

LMX_p, wherein:

- (a) M is a Group 9, 10 or 11 metal;
- (b) L is a bidentate ligand defined by the formula:

96B035-21(1), 1.111.03.17.03



wherein

- H2 Cont*
- (i) A is a bridging group containing a Group 13-15 element;
 - (ii) each E is independently a Group 15 or 16 element covalently bonded to M;
 - (iii) each R is independently a C₁-C₃₀ radical or diradical group which is a hydrocarbyl, substituted hydrocarbyl, halocarbyl, substituted halocarbyl, hydrocarbyl-substituted organometalloid, or halocarbyl-substituted organometalloid;
 - (iv) m and n are independently 1 or 2 depending on the valency of E; and
 - (v) p is the charge on the bidentate ligand such that the charge of LMX_r is neutral;
 - (e) each X is, independently, a hydride radical, a hydrocarbyl radical, a substituted hydrocarbyl radical, a halocarbyl radical, a substituted halocarbyl radical, hydrocarbyl-substituted organometalloid or halocarbyl-substituted organometalloid; a univalent anionic ligand; a neutral hydrocarbyl-containing donor ligand; a neutral non-hydrocarbyl atom containing donor ligand; or two Xs are joined and bound to the metal atom to form a metallacycle ring containing from about 2 to about 20 carbon atoms; or two Xs are joined to form an anionic chelating ligand; and
 - (f) r is 1, 2 or 3;
 - II.) an activator compound; and
 - III.) a solid support wherein said late transition metal connected to said bidentate ligand is immobilized on said support.

H3

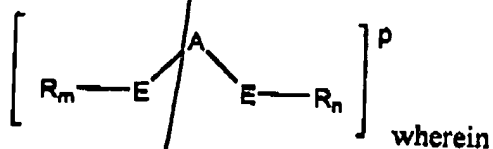
13. (Amended Five Times) A late transition metal catalyst, essentially without residual solvent, for olefin polymerization comprising: I.) a Group -9, -10 or -11 metal connected to a bidentate ligand, wherein a catalyst precursor has the formula:

LMX_r wherein:

- (a) M is a Group 9, 10 or 11 metal;

96B035-21[1].1.111.03.17.03

(b) L is a bidentate ligand defined by the formula:



- 43
- (i) A is a bridging group containing a Group 13-15 element;
 - (ii) each E is independently a Group 15 or 16 element covalently bonded to M;
 - (iii) each R is independently a C₁-C₃₀ radical or diradical group which is a hydrocarbyl, substituted hydrocarbyl, halocarbyl, substituted halocarbyl, hydrocarbyl-substituted organometaloid, or halocarbyl-substituted organometaloid;
 - (iv) m and n are independently 1 or 2 depending on the valency of E; and
 - (v) p is the charge on the bidentate ligand such that the oxidation state of MX_r is satisfied;
- (g) each X is, independently, a hydride radical, a hydrocarbyl radical, a substituted hydrocarbyl radical, a halocarbyl radical, a substituted halocarbyl radical, hydrocarbyl-substituted organometaloid or halocarbyl-substituted organometaloid; a neutral hydrocarbyl-containing donor ligand; a univalent anionic ligand; a neutral non-hydrocarbyl atom containing donor ligand; or two Xs are joined and bound to the metal atom to form a metallacycle ring containing from about 2 to about 20 carbon atoms; or two Xs are joined to form an anionic chelating ligand; and
- (h) r is 1, 2 or 3;
- II.) an activator compound; and
- III.) a solid support wherein said late transition metal connected to said bidentate ligand is immobilized on said support, where the late transition metal loading is less than 100 micromoles transition metal per gram of solid support.

17. (Amended four times) The catalyst system of Claims 1, 6, or 13 wherein said activator is one of alkylalumoxane, modified alkylalumoxane, aluminum alkyl, aluminum

96B035-21(1).1.111.03.17.03

alkyl halide, aluminum halide, ionizing anion precursor compounds or noncoordinating anion precursors.

18. (Amended Once) The catalyst system of Claim 17 wherein the noncoordinating anion precursor comprises tetrakis(perfluorophenyl)boron.

19. (Amended Four Times) The catalyst system of Claim 17 wherein the noncoordinating anion precursor comprises a halide salt of Group-13-16 metals or metalloids.

20. (Three Times Amended) The catalyst system of Claim 18 wherein the catalyst-precursor-to-noncoordinating-anion-precursor molar ratio is from 10:1 to 1:10.

39. (Once Amended) The catalyst of Claim 17 wherein the catalyst-precursor-to-alumoxane molar ratio is from 1:500 to 10:1.

Please add the following new claims:

41. (New) The catalyst system of Claim 17, wherein said alkylalumoxane comprises methylalumoxane, or wherein said modified alkylalumoxane comprises modified methylalumoxane.

42. (New) The catalyst system of claim 19, wherein a total transition metal compound to noncoordinating anion precursor mole ratio is from 10:1 to 1:10.

REMARKS

Reconsideration of the present claims, in light of the attached claim amendments and the Remarks which follow, is respectfully requested.

Claims now before the Examiner are 1, 6, 13, 17-20, and 41-42, claims 22-27, 30 and 33-40 having been withdrawn from consideration.

The numbering in this response will follow that of the Examiner's Action.

96B035-21(1).1.111.03.17.03